



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Thomas A. Isenburg

Title: REUSABLE THERMAL SOLUTION ATTACHMENT MECHANISM AND METHODS OF USING SAME

Docket No.: 884.444US1

Filed: June 1, 2001

Examiner: Michael V. Datskovsky

Customer No.: 21186

Serial No.: 09/872628

Due Date: March 23, 2004

Group Art Unit: 2835

Confirmation No.: 1711

Commissioner for Patents

Attn: MAIL STOP ISSUE FEE

P.O. Box 1450

Alexandria, VA 22313-1450

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December 23, 2003

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By Ann M. McCrackin

Ann M. McCrackin

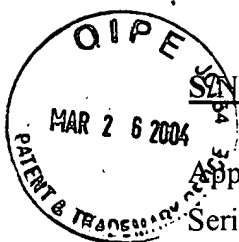
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Chris Hammond
Name

Chris Hammond
Signature



SN 09/872628

PATENT

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Applicant:	Thomas A. Isenburg	Examiner:	Michael Datskovsky
Serial No.:	09/872628	Group Art Unit:	2835
Filed:	June 1, 2001	Docket:	884.444US1
Title:	REUSABLE THERMAL SOLUTION ATTACHMENT MECHANISM AND METHODS OF USING SAME		
Assignee:	Intel Corporation	Customer No:	21186

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

MS Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In the Examiner's "Reasons for Allowance" mailed on December 23, 2003, the Examiner states that Kehley, Chan and Frankeny each teach an apparatus for attaching a thermal solution (heat sink) to contact a processor located on a circuit board, said apparatus comprising a mounting plate having an opening to allow the heat sink to contact the processor and a backing plate connected with said mounting plate by a plurality of aligning pins.

The Applicant respectfully clarifies that Kehley discusses a socket that connects electronic components, such as integrated circuit (IC) modules with arrays of solder balls or columns, lands, pads of similar contact to other components, typically, substrates such as printed circuit boards. Kehley's socket includes a pressure plate which serves as a heat sink and directly contacts an IC module. The IC module is aligned with a module registration sheet. The module registration sheet is connected to a base with posts. The posts extend into four actuation slots in a cam ring located on top of the pressure plate/heat sink. Kehley does not teach an apparatus for attaching a thermal solution to contact a processor located on a circuit board comprising a mounting plate having an opening which allows the heat sink to contact the processor and a backing plate connected with said mounting plate by a plurality of aligning pins. (See also Page 5, lines 15-17 of the Office Action mailed on 04/01/2003).

Frankeny discusses a socket for attaching a flip chip die or ball grid array devices to a printed circuit board substrate having a pattern of solder covered lands. A cap in direct contact with the flip chip die or ball grid array module can serve as a heat sink. A screw threads through

an arch located on top of the cap and applies force to the center of the cap, which pivots freely around the end of the screw. The arch is secured to a stiffener with alignment pins. Frankeny does not teach an apparatus for attaching a thermal solution to contact a processor located on a circuit board comprising a mounting plate having an opening which allows the heat sink to contact the processor and a backing plate connected with said mounting plate by a plurality of aligning pins.

Chan discusses a system for aligning and connecting electrical components. The system includes a component locator having openings adapted to align an IC module (which can optionally include a heat sink affixed to its upper surface) with other components. The component locator has a frame with a central opening onto which the IC module is placed. A latch or actuator containing an optional actuator screw can be used to apply pressure to the heat sink or IC module. The assembly, including the component locator, is secured together with reference, rotation and clamping pins. Chan does not teach an apparatus for attaching a thermal solution to contact a processor located on a circuit board comprising a mounting plate having an opening which allows the heat sink to contact the processor and a backing plate connected with said mounting plate by a plurality of aligning pins.

The Examiner further states that Wang is very close to Applicant's invention but has a later priority date.

Applicant agrees that Wang has a later priority date but traverses the characterization of Wang as being "very close" to Applicant's invention. Applicant further notes that any characterization of a reference with a later priority date is irrelevant to the determination of patentability.

COMMENTS ON EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

Serial Number: 09/872628

Filing Date: June 1, 2001

Title: REUSABLE THERMAL SOLUTION ATTACHMENT MECHANISM AND METHODS OF USING SAME

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The Examiner is invited to telephone Applicant's attorney, Barbara Clark at (515) 233-3865, or Applicant's below-named representative at (612) 349-9592 to facilitate the prosecution of this application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

THOMAS A. ISENBURG

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
Attorneys for Intel Corporation
P.O. Box 2938
Minneapolis, Minnesota 55402
(612) 349-9592

Date March 23, 2004 By Ann M. McCrackin
Ann M McCrackin
Reg. No. 42,858

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Chris Hammond
Name

Chris Hammond
Signature